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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MAYES, MELVIN C

ART UNIT PAPER NUMBER

1734

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,288

Applicant(s)

WILKIE ET AL.

Examiner

Melvin Curtis Mayes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

(1)

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 5, 2005 has been entered.

Claim Rejections - 35 USC § 112

(2)

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

(3)

Claims 7 and 9-11 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for **polymer components** segregated and independently maintained at different temperatures within the spin beam assembly, does not reasonably provide enablement for **the polymer streams** segregated and independently maintained at different temperatures within the spin beam assembly. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

According to the specification, the different polymer components are segregated and maintained at different temperatures within the spin beam assembly (pgs. 4, 7, 9) while it is polymer streams which are delivered from the spin beam assembly to the spinneret orifices. It is suggested that Claim 7 read “ and the differing polymer components are segregated...”

(4)

Claims 14 and 15 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the pump blocks configured to limit heat transfer to polymer components, does not reasonably provide enablement for the spin beam assembly so configured. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

According to the specification, the pump blocks are further constructed of a material having a low thermal conductivity to control or limit heat transferred between the pump blocks, pumps and polymer fluid traveling through the pumps (pg. 9, lines 4-7). While there is support for the pump blocks configured to limit heat transfer to polymer components, there is no support for the spin beam assembly configured to limit heat transfer to polymer components flowing within each pump block.

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(5)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(6)

Claims 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13-15 claim that “the **differing polymer components** are segregated and independently maintained at different temperatures” but depends from Claim 7 which claims, “the **polymer streams** including differing polymer components are segregated. This is not consistent. As set forth previously, Claim 7 should be amended.

Claim Rejections - 35 USC § 103

(7)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(8)

Claims 7 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gues et al. 5,814,349 in view of Berger 6,103,181 and Uraya et al. 3,659,989.

Gues et al. disclose a method of making a spun-bond web comprising: extruding thermoplastic strands from a spinneret; blowing process air from a blower onto the curtain of strands to cool the strands to form thermoplastic filaments (quenching by a gas stream in a

quenching chamber); stretching the filaments in a vertical drawing channel by the process air (drawing in a drawing chamber); and depositing the filaments onto a continuous endless belt (forming surface) to form a spun-bond web of interentangled filaments (non-woven fibrous web). The apparatus is a closed system in which an enclosed environment is maintained between the spinneret, quenching chamber and drawing chamber (col. 1-5). Gues et al. do not disclose delivering a plurality of polymer streams from a spin beam assembly to the spinneret, at least two of the streams including different polymer components and the polymer components segregated and independently maintained at different temperatures in the spin beam assembly prior to delivery to the spinneret orifices.

Berger teaches that by producing a mixed fiber web of substantially complete uniformity, improved functional properties can be afforded in a variety of fibrous products. Berger teaches that for making a web of monocomponent fibers of different polymers or a web of multiple-component fibers, different polymer material from independent sources are fed from independent sources through melt pumps to enter a die assembly (spin pack) having mutually separated distribution paths of mounting blocks and distribution plates to an array of spinneret orifices to produce a uniform blend of fibers of differing characteristics. For making bicomponent fibers core-forming polymer and sheath-forming polymer are fed from independent sources through melt pumps to enter the die assembly. For making a homogenous web of two different polymers, two independent sources of polymer material are provided and fed through the die assembly, the polymer fed into the die assembly under different speeds so that the speed of extruding of the polymer material through alternate spinneret opening is different so as to be attenuated differently (col. 4, lines 32-54, col. 6, lines 18-47, col. 10, line 34 – col. 16, line 64).

Uraya et al. teach that the spinnability and property of composite filaments made by spinning two or more polymers is improved by controlling the temperatures of the polymer melts separately and retarding transmission of heat between the melts until they are extruded together. The spinneret is provided with a feeding block and filter block (corresponds to spin beam assembly) which are connected to a melting apparatus from which melt is received and connected to breaker plate and nozzle plate (corresponds to spin pack) and heated independently so as to keep the spinning melts at different temperatures within the feeding block and filter block. The heating of the filter block (corresponds to a manifold) can be effected by jackets for circulating a heat medium (col. 1-7).

It would have been obvious to one of ordinary skill in the art to have modified the method of Gues et al. for making a spun-bond web by delivering to the spinneret, different polymers, as taught by Berger, to make a mixed fiber web of substantially complete uniformity and improved functional properties. Making a web of either bicomponent fibers or of single fibers of two different polymers by supplying different polymers to the spinneret orifices via separated distribution paths in mounting blocks and distribution plates of the die assembly (spin pack including spinnerette) would have been obvious to one of ordinary skill in the art, as taught by Berger for making a uniform mixed fiber web of improved function properties.

It would have been obvious to one of ordinary skill in the art to have further modified the method of Gues et al. by providing the different polymers by controlling the temperatures of the polymers separately, as taught by Uraya et al., for improved spinnability and property of composite filaments. Providing the spinneret with a spin beam assembly having manifolds in which the polymers are segregated and maintained at different temperatures by a heat transfer

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medium would have been obvious to one of ordinary skill in the art, as Uraya et al. teach that the spinneret is provided with filter blocks (manifolds) which are heated at different temperatures by circulating heating medium to keep the melts at different temperatures before feeding to the spinneret.

Delivering the polymers to the spinneret orifices as varying flow rates, as claimed in Claim 9, would have been obvious to one of ordinary skill in the art, as taught by Berger, to extrude the polymer materials at different speeds so as to attenuate the extruded polymer materials differently.

(9)

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over as applied to claim 7 above, and further in view of Ogasawara et al. 4,648,826.

Ogasawara et al. teach that a conventional melt-spinning apparatus includes a metering pump and pump block and teaches that melt-spinning apparatus for producing not only simple component filament yarn but also a multiple component filament yarns using multiple melt-spinning packs includes multiple metering pump blocks containing metering pumps. The melt-spinning pack and the metering pump blocks are heated by vapor from a heating medium to maintain their temperature at desired levels (col. 1-6)

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by providing between the filter blocks and spinneret a plurality of pump blocks heated by a heating medium and pumps on the pump blocks, as taught by Ogasawara et al. as part of a conventional melt-spinning apparatus for maintaining different polymers are desired temperature. Maintaining the different polymers at different temperature

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within the pump blocks would have been obvious to one of ordinary skill in the art to continue maintaining the polymers at different temperature until they are fed to the spinneret for improved spinnability and property of composite filaments, as suggested by Uraya et al.

(10)

Claims 7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gues et al. 5,814,349 in view of Berger 6,103,181 and JP 61-296110 Abstract.

Gues et al. disclose a method of making a spun-bond web comprising: extruding thermoplastic strands from a spinneret; blowing process air from a blower onto the curtain of strands to cool the strands to form thermoplastic filaments (quenching by a gas stream in a quenching chamber); stretching the filaments in a vertical drawing channel by the process air (drawing in a drawing chamber); and depositing the filaments onto a continuous endless belt (forming surface) to form a spun-bond web of interentangled filaments (non-woven fibrous web). The apparatus is a closed system in which an enclosed environment is maintained between the spinneret, quenching chamber and drawing chamber (col. 1-5). Gues et al. do not disclose delivering a plurality of polymer streams from a spin beam assembly to the spinneret, at least two of the streams including different polymer components and the polymer components segregated and independently maintained at different temperatures in the spin beam assembly prior to delivery to the spinneret orifices.

Berger teaches that by producing a mixed fiber web of substantially complete uniformity, improved functional properties can be afforded in a variety of fibrous products. Berger teaches that for making a web of monocomponent fibers of different polymers or a web of multiple-component fibers, different polymer material from independent sources are fed from independent

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sources through melt pumps to enter a die assembly (spin pack) having mutually separated distribution paths of mounting blocks and distribution plates to an array of spinneret orifices to produce a uniform blend of fibers of differing characteristics. For making bicomponent fibers core-forming polymer and sheath-forming polymer are fed from independent sources through melt pumps to enter the die assembly. For making a homogenous web of two different polymers, two independent sources of polymer material are provided and fed through the die assembly, the polymer fed into the die assembly under different speeds so that the speed of extruding of the polymer material through alternate spinneret opening is different so as to be attenuated differently (col. 4, lines 32-54, col. 6, lines 18-47, col. 10, line 34 – col. 16, line 64).

JP 61-296110 Abstract (JP '110) teaches that in melt spinning plural polymers, the spin pack is provided with polymer feed blocks above the spin block to feed molten polymer to the spinning pack, the feed blocks heated and temperature control carried out independently.

It would have been obvious to one of ordinary skill in the art to have modified the method of Gues et al. for making a spun-bond web by delivering to the spinneret, different polymers, as taught by Berger, to make a mixed fiber web of substantially complete uniformity and improved functional properties. Making a web of either bicomponent fibers or of single fibers of two different polymers by supplying different polymers to the spinneret orifices via separated distribution paths in mounting blocks and distribution plates of the die assembly (spin pack including spinnerette) would have been obvious to one of ordinary skill in the art, as taught by Berger for making a uniform mixed fiber web of improved function properties.

It would have been obvious to one of ordinary skill in the art to have further modified the method of Gues et al. by providing the different polymers by controlling the temperatures of the

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polymers separately, as taught by JP '110, as performed when melt spinning plural polymers. Providing the spinneret with a spin beam assembly having within which the polymers are segregated and maintained at different temperatures would have been obvious to one of ordinary skill in the art, as JP '110 teach that the spin pack is provided with polymer feed blocks above the spin block to feed molten polymer to the spinning pack, the feed blocks heated and temperature control carried out independently.

Delivering the polymers to the spinneret orifices as varying flow rates, as claimed in Claim 9, would have been obvious to one of ordinary skill in the art, as taught by Berger, to extrude the polymer materials at different speeds so as to attenuate the extruded polymer materials differently.

(11)

Claims 7, 9-12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gues et al. 5,814,349 in view of Berger 6,103,181 and DD 63116.

Gues et al. disclose a method of making a spun-bond web comprising: extruding thermoplastic strands from a spinneret; blowing process air from a blower onto the curtain of strands to cool the strands to form thermoplastic filaments (quenching by a gas stream in a quenching chamber); stretching the filaments in a vertical drawing channel by the process air (drawing in a drawing chamber); and depositing the filaments onto a continuous endless belt (forming surface) to form a spun-bond web of interentangled filaments (non-woven fibrous web). The apparatus is a closed system in which an enclosed environment is maintained between the spinneret, quenching chamber and drawing chamber (col. 1-5). Gues et al. do not disclose delivering a plurality of polymer streams from a spin beam assembly to the spinneret, at least

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two of the streams including different polymer components and the polymer components segregated and independently maintained at different temperatures in the spin beam assembly prior to delivery to the spinneret orifices.

Berger teaches that by producing a mixed fiber web of substantially complete uniformity, improved functional properties can be afforded in a variety of fibrous products. Berger teaches that for making a web of monocomponent fibers of different polymers or a web of multiple-component fibers, different polymer material from independent sources are fed from independent sources through melt pumps to enter a die assembly (spin pack) having mutually separated distribution paths of mounting blocks and distribution plates to an array of spinneret orifices to produce a uniform blend of fibers of differing characteristics. For making bicomponent fibers core-forming polymer and sheath-forming polymer are fed from independent sources through melt pumps to enter the die assembly. For making a homogenous web of two different polymers, two independent sources of polymer material are provided and fed through the die assembly, the polymer fed into the die assembly under different speeds so that the speed of extruding of the polymer material through alternate spinneret opening is different so as to be attenuated differently (col. 4, lines 32-54, col. 6, lines 18-47, col. 10, line 34 – col. 16, line 64).

DD 63116 teaches that in an improved apparatus for melt spinning multicomponent fibers, the spinner has separately heated melters for heating each polymer type at a different temperature and separate pump blocks separated by insulation and separately heated, each block having its own metering pump (Abstract).

It would have been obvious to one of ordinary skill in the art to have modified the method of Gues et al. for making a spun-bond web by delivering to the spinneret, different

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polymers, as taught by Berger, to make a mixed fiber web of substantially complete uniformity and improved functional properties. Making a web of either bicomponent fibers or of single fibers of two different polymers by supplying different polymers to the spinneret orifices via separated distribution paths in mounting blocks and distribution plates of the die assembly (spin pack including spinnerette) would have been obvious to one of ordinary skill in the art, as taught by Berger for making a uniform mixed fiber web of improved function properties.

It would have been obvious to one of ordinary skill in the art to have further modified the method of Gues et al. by providing a spin beam assembly having separate melters and pump blocks for heating and maintaining the different polymers at different temperatures before feeding to the spin pack having spinneret orifices, as taught by DD 63116, for improved melt spinning of multicomponent fibers. By providing the separate pump block as separated by insulation, the pump blocks obviously separate and maintain the different polymers at different temperatures and are obviously configured to limit heat transfer from each pump block to polymer components flowing within each pump block or between different polymer components, as claimed in Claims 14 and 15.

Delivering the polymers to the spinneret orifices as varying flow rates, as claimed in Claim 9, would have been obvious to one of ordinary skill in the art, as taught by Berger, to extrude the polymer materials at different speeds so as to attenuate the extruded polymer materials differently.

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Conclusion

(12)


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(13)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
February 17, 2006